What is claimed is

1. A method of detecting a specific nucleic acid in a sample comprising:

   (a) contacting the nucleic acid with a first oligonucleotide linked to a selector tag and a second oligonucleotide linked to a detector tag, in a reaction mixture under conditions that allow the first and second oligonucleotides to specifically hybridize with the nucleic acid such that the first oligonucleotide is located immediately adjacent to the second oligonucleotide, thereby forming adjacently hybridized first and second oligonucleotides;

   (b) ligating the adjacently hybridized first and second oligonucleotides to form a ligated oligonucleotide; and

   (c) identifying the detector tag associated with the ligated oligonucleotide.

   thereby detecting a specific nucleic acid in a sample.

2. The method of claim 1, wherein identifying the detector tag associated with the ligated oligonucleotide comprises separating, using the selector tag, the ligated oligonucleotide from the reaction mixture removing the detector tag from the ligated oligonucleotide; and identifying the detector tag associated with the ligated oligonucleotide.

3. The method of claim 2, wherein using the selector tag comprises contacting the selector tag with an agent that specifically binds to the selector tag.

4. The method of claim 2, wherein removing the detector tag is performed by subjecting the ligated oligonucleotide to a de-linking agent selected from the group consisting of an acid condition, an alkaline condition, a visible light radiation, a UV radiation, heat, a reducing condition and an oxidizing condition.

5. The method of claim 1, wherein identifying the detector tag associated with a ligated oligonucleotide comprises using mass spectrometry.

6. The method of claim 5, further comprising using chromatography.

7. The method of claim 1, wherein the selector tag is selected from a fluorescent moiety, an antibody and biotin.

8. The method of claim 1, wherein the detector tag is a peptoid.

9. A method of detecting a plurality of specific nucleic acids in a sample comprising:

(a) contacting each specific nucleic acid with an oligonucleotide pair in a reaction mixture under conditions that allow the oligonucleotide pair to specifically hybridize to the nucleic acid such that the oligonucleotide pair members are located immediately adjacent to each other thereby forming an adjacently hybridized oligonucleotides pair, wherein each oligonucleotide pair comprises a first oligonucleotide linked to a selector tag and a second oligonucleotide linked to a detector tag;

(b) ligating each adjacently hybridized oligonucleotide pair to form one or more ligated oligonucleotides; and

(c) identifying the one or more detector tags associated with the one or more ligated oligonucleotides.

thereby detecting a plurality of specific nucleic acids in a sample.

10. The method of claim 9, wherein identifying the detector tag associated with the ligated oligonucleotide comprises separating, using the selector tag, the ligated oligonucleotide from the reaction mixture, removing the detector tag from the ligated oligonucleotide; and identifying the detector tag associated with the ligated oligonucleotide.

11. The method of claim 10 wherein using the selector tag comprises contacting the selector tag with an agent that specifically binds to the selector tag.

12. The method of claim 10 wherein removing the detector tag is performed by subjecting the ligated oligonucleotide to a de-linking agent selected from the group consisting of an acid condition, an alkaline condition, a visible light radiation, a UV radiation, heat, a reducing condition and an oxidizing condition.

13. The method of claim 9, wherein identifying the detector tag associated with a ligated oligonucleotide comprises using mass spectrometry.

14. The method of claim 13 further comprising using chromatography.

15. The method of claim 9, wherein the selector tag is selected from a fluorescent moiety, an antibody and biotin.

16. The method of claim 9, wherein the detector tag is a peptoid.

17. The method of claim 9, wherein each first oligonucleotide linked to selector tag has an identical selector tag.

18. The method of claim 9, wherein each first oligonucleotide linked to selector tag has a different tag.

19. The method of claim 9, wherein each second oligonucleotide linked to detector tag has a different tag.

20. A method of detecting a nucleic acid in a sample comprising:

    (a) amplifying the nucleic acid with a primer pair to form a dual-tagged amplification product in a reaction mixture, wherein the primer pair is a first oligonucleotide linked to a selector tag and a second oligonucleotide linked to a detector tag; and

    (b) identifying the detector tag associated with the dual-tagged amplification product,

    thereby detecting the nucleic acid in a sample.

21. The method of claim 20, wherein identifying the detector tag comprises separating, using the selector tag, the amplification product from the reaction mixture prior to identifying the detector tag associated with the amplification product.

22. The method of claim 21, wherein using the selector tag comprises contacting the selector tag with an agent that specifically binds to the selector tag

23. The method of claim 20, further comprising removing the detector tag from the amplification product prior to step (b).

24. The method of claim 23, wherein removing the detector tag is performed by subjecting the ligated oligonucleotide to a de-linking agent selected from the group consisting of an acid condition, an alkaline condition, a visible light radiation, a UV radiation, heat, a reducing condition and an oxidizing condition.

25. The method of claim 20, wherein the selector tag is selected from a fluorescent moiety, an antibody and biotin.

26. The method of claim 20, wherein the detector tag is a peptoid.

27. The method of claim 20, wherein identifying the detector tag comprises using mass spectrometry.

28. A method of detecting a nucleic acid in a sample comprising:

(a) contacting the nucleic acid with an oligonucleotide linked to a detector tag under conditions that allow the oligonucleotide to specifically hybridize to the nucleic acid to form a mixture of hybridized oligonucleotide and unhybridized oligonucleotide;

(b) separating the hybridized oligonucleotide from the unhybridized oligonucleotide; and

(a) identifying the detector tag, thereby detecting the nucleic acid.

29. The method of claim 28, wherein separating comprises contacting the mixture with an agent that binds to a polyA tail.

30. The method of claim 28, wherein separating comprises contacting the mixture with an agent that binds to a 5'-capped nucleic acid.

31. A method of generating a doubled-tagged oligonucleotide duplex comprising:

(a) contacting a single-stranded nucleic acid with a first oligonucleotide linked to a selector tag and a second oligonucleotide linked to a detector tag, under conditions that allow the first and second oligonucleotides to specifically hybridize with the nucleic acid such that the first oligonucleotide is located immediately adjacent to the second oligonucleotide thereby forming an adjacently hybridized oligonucleotide;

(b) ligating the first and second oligonucleotides

thereby forming a duplex having detector and selector tags.

32. The method of claim 31, wherein the selector tag and the detector tag are selected from a fluorescent moiety, an antibody, biotin and a peptoid, wherein the selector tag and detector tag are different.

33. A kit comprising:

(a) an oligonucleotide primer pair comprising

(i) a first selector oligonucleotide linked to a selector tag;

(ii) a second selector oligonucleotide linked to a detector tag; and

(b) an agent that binds to the selector tag.

34. A kit comprising

(a) a first selector oligonucleotide linked to a selector tag;

(b) a second selector oligonucleotide linked to a detector tag; and

(c) a DNA ligase.

35. A library of detector oligonucleotides, comprising a plurality of oligonucleotide linked to detector tag, wherein each oligonucleotide specifically hybridizes with a nucleic acid sequence.

36. The library of claim 35, wherein the detector tag is removable.

37. The library of claim 35, wherein the detector tag is a peptoid.

38. The library of claim 35, wherein the detector tag is identifiable by mass spectroscopy.